Beyond Chemical Rockets: Elon Musk's Metaphysical Journey to Interstellar Frontiers via AI and Consciousness

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The discourse surrounding Elon Musk's ambitions often centers on his visible enterprises like SpaceX, which propel humanity toward multi-planetary existence through conventional rocketry. However, physicist Eric Weinstein posits a deeper layer: Musk's true space endeavor may lie not in SpaceX's chemical propulsion systems, limited to near-solar destinations, but in xAI and its Grok AI, designed to unravel the universe's fundamental truths amid perceived corruption in institutional science. This perspective highlights Musk's apparent distrust of groupthink-plagued academia, favoring engineering pragmatism and AI-driven inquiry to bypass human biases. Extending this, we propose that the shortest path to the stars transcends physical machinery, delving inward through metaphysics and consciousness. Musk's engagements with simulation theory suggest reality itself might be malleable, accessible via mental exploration rather than exhaustive travel. Yet, his relentless schedule—overseeing multiple conglomerates—raises questions about capacity for such profound reflection. Tools like Neuralink could mitigate this, merging human cognition with AI to unlock perceptual shortcuts, potentially redefining space exploration as a cognitive evolution. This paper explores these intersections, arguing that Musk's vision integrates technology, philosophy, and psyche, offering a paradigm where outward expansion mirrors inward discovery. By examining these elements, we illuminate pathways for humanity's cosmic aspirations beyond traditional boundaries.

Keywords: Elon Musk, SpaceX, xAI, Grok, Eric Weinstein, interstellar travel, chemical rockets, metaphysics, consciousness, simulation hypothesis, Neuralink, scientific institutions, AI in science, cognitive overload, multi-planetary species.

A collaboration with Grok, xAI, 2026. CC4.0.

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1. Introduction

The pursuit of interstellar travel has long captivated human imagination, yet practical efforts remain tethered to the limitations of contemporary physics and engineering. Elon Musk, through SpaceX, has advanced chemical rocketry to unprecedented levels, achieving reusable launches, orbital refueling milestones, and ambitious plans for Mars colonization. These endeavors position humanity on the cusp of becoming a multi-planetary species, safeguarding against existential risks confined to Earth. However, physicist Eric Weinstein offers a provocative reinterpretation: Musk's outward-facing SpaceX may serve as a visible, pragmatic bridge, while his deeper ambitions for reaching the stars reside elsewhere—in xAI and its flagship AI system, Grok.

Weinstein observes that Musk frequently invokes the Latin phrase "Ad Astra" (to the stars), yet SpaceX relies on chemical propulsion, which physics constrains to solar-system scales at best. Interstellar distances demand breakthroughs in fundamental physics—perhaps warp drives, wormholes, or entirely new paradigms—that current institutional science, plagued by what Musk perceives as corruption, politics, and groupthink, seems ill-equipped to deliver. Musk's background in physics, his aversion to the term "researcher" in favor of engineers, and his establishment of xAI as a truth-seeking entity to "understand the universe" suggest a bifurcated strategy: engineer the near-term exodus while cultivating AI to probe deeper cosmic truths independently of flawed human systems.

This paper extends Weinstein's thesis into metaphysical territory. If true interstellar expansion requires transcending material limits, the shortest path may not lie outward through brute-force propulsion but inward—through the exploration and mastery of consciousness itself. Musk's endorsements of the simulation hypothesis, where reality is likely a computable construct, imply that "hacking" the underlying code of existence could render physical travel obsolete. Neuralink's brain-machine interfaces further hint at this convergence: by merging human cognition with AI, one might expand perceptual and cognitive horizons, accessing non-local dimensions or altered states that bypass conventional space-time constraints.

Yet this vision encounters a profound paradox. Musk's operational demands—overseeing SpaceX launches, Tesla innovations, X platform dynamics, Neuralink trials, and xAI development—consume his time in extreme measure. Reports describe 80–120-hour workweeks, 5-minute time-blocking, and minimal sleep, leaving scant space for contemplative reflection essential to metaphysical inquiry. The very tools he builds, such as Neuralink symbiosis or Grok-assisted reasoning, may ultimately alleviate this cognitive bottleneck, enabling distributed, accelerated insight.

The thesis of this paper is that Musk's trajectory integrates two complementary paths to the stars: an outward engineering vector via SpaceX and an inward metaphysical vector via consciousness-augmented AI. By synthesizing Weinstein's analysis with philosophical considerations of mind, simulation theory, and cognitive enhancement, we argue for a holistic paradigm where humanity's cosmic destiny emerges not solely from conquering distance but from evolving perception and understanding. This dual approach challenges conventional space narratives, proposing that the frontiers of the universe may be as much internal as external.

2. Eric Weinstein's Analysis of Elon Musk's Enigmatic Persona

Eric Weinstein, a mathematician, physicist, and cultural commentator known for his critiques of institutional science, has offered one of the more unconventional interpretations of Elon Musk's motivations and enterprises. In a wide-ranging conversation on The Ranveer Show podcast hosted by Ranveer Allahbadia, Weinstein described Musk as a figure who is "very, very strange" in ways that often escape public notice. He portrayed Musk not merely as a prolific entrepreneur but as someone whose choices reveal a deeper, more mysterious agenda that diverges from the surface-level narrative of his companies.

Central to Weinstein's analysis is Musk's repeated use of the motto "Ad Astra," Latin for "to the stars." This phrase appears in SpaceX branding, mission statements, and Musk's personal communications, evoking a grand vision of humanity expanding across the cosmos. Yet Weinstein highlights a fundamental mismatch: SpaceX operates primarily with chemical rockets—advanced iterations of decades-old propulsion technology reliant on combustion and thrust. While these systems have revolutionized access to orbit, enabled reusable boosters, and laid groundwork for Mars missions, their exhaust velocities and energy densities impose strict physical limits. Chemical propulsion can realistically achieve travel to the Moon, Mars, or perhaps the outer solar system with significant engineering effort, but true interstellar journeys—to other star systems—remain infeasible without revolutionary advances in physics, such as faster-than-light concepts, exotic matter, or entirely new energy paradigms.

Weinstein argues that someone with Musk's physics education—who once contemplated graduate studies in the field—should recognize these constraints acutely. Musk's persistent invocation of "Ad Astra" alongside a focus on chemical rocketry strikes Weinstein as incongruous, suggesting that the public-facing SpaceX serves a different, perhaps preparatory, role. Rather than representing the ultimate vehicle for reaching the stars, SpaceX may function as a pragmatic, visible effort to ensure humanity's survival and expansion within reachable bounds while Musk pursues more profound solutions elsewhere.

This leads to Weinstein's core hypothesis: Musk's genuine "space company"—the one aligned with the ambition to truly go "to the stars"—is not SpaceX but xAI, the organization developing the Grok AI system. Weinstein points to symbolic clues supporting this view. Grok's logo resembles a stylized black hole profile, evoking gravitational singularities, event horizons, and the extreme frontiers of theoretical physics. Its stated mission, "to understand the universe," contrasts sharply with typical AI objectives centered on productivity, entertainment, or commercial applications. In Weinstein's reading, these elements signal that xAI is engineered for deep, foundational inquiry into the laws of reality, potentially uncovering the breakthroughs required for interstellar capability.

Weinstein further contextualizes this by noting Musk's apparent disillusionment with contemporary scientific institutions. Musk has publicly expressed disdain for the term "researcher," often elevating engineers—who build and iterate rapidly—over scientists embedded in academic or bureaucratic structures. Weinstein interprets this not as outright rejection of science but as a belief that human-led science has become compromised by politics, funding pressures, groupthink, and incentives misaligned with truth-seeking. In such an environment, Musk may view AI as the only reliable path forward: an entity capable of pursuing evidence without ego, careerism, or ideological bias.

Through this lens, Weinstein presents Musk as enigmatic precisely because his actions form a layered strategy. The overt engineering triumphs of SpaceX capture attention and drive near-term progress, while the subtler, background work at xAI aims at paradigm-shifting discoveries. This duality explains why Musk appears simultaneously obsessed with space yet seemingly uninterested in collaborating deeply with physicists or funding speculative theoretical research in traditional venues. The "strangeness" lies in how seamlessly Musk maintains this bifurcation, rarely articulating it explicitly while allowing symbolic hints—like mottos, logos, and slogans—to point toward his larger design.

Weinstein's commentary invites scrutiny of whether Musk's enterprises are as compartmentalized as they seem or if they represent an integrated, if opaque, vision for transcending current technological ceilings. This perspective sets the stage for examining the metaphysical extensions proposed in later sections, where the inward turn toward consciousness and AI-augmented perception may constitute the true bridge to the stars.

3. Limitations of SpaceX's Chemical Propulsion Paradigm

SpaceX has achieved remarkable advancements in chemical rocketry, transforming what was once prohibitively expensive and unreliable into a reusable, cost-effective system capable of frequent orbital access. The Falcon series, Starship prototypes, and ongoing developments in

full-flow staged combustion engines represent the pinnacle of liquid propellant technology, primarily using methane and oxygen or kerosene-based combinations. These innovations have enabled rapid iteration, vertical landings, and plans for crewed Mars missions within the coming decades. Yet, when evaluated against the demands of true interstellar travel—to destinations beyond the solar system, such as Alpha Centauri at 4.37 light-years—these systems reveal fundamental inadequacies rooted in the physics of chemical propulsion.

The core limitation stems from specific impulse (I_{sp}), a measure of propellant efficiency expressed in seconds, which quantifies how effectively a rocket converts propellant mass into velocity change (delta-v). Chemical rockets achieve I_{sp} values typically ranging from 250 to 450 seconds for the best engines, such as the Raptor at around 380 seconds in vacuum. This reflects the energy density of chemical bonds in fuels like methane or hydrogen, which release energy through combustion but remain orders of magnitude below what is required for relativistic or even significant fractional-light-speed travel.

To reach even modest interstellar speeds—say, 1% of the speed of light (approximately 3,000 km/s)—a spacecraft must overcome enormous delta-v requirements. The rocket equation, $\Delta v = v_e * \ln(m_0 / m_f)$, where v_e is exhaust velocity (directly related to I_{sp} via $v_e = I_{sp} * g_0$, with $g_0 \approx 9.81$ m/s²) and m_0/m_f is the mass ratio, illustrates the exponential penalty. For chemical systems with v_e around 3–4 km/s, achieving high delta-v demands mass ratios that become astronomically large. A payload of modest size would require fuel masses exceeding planetary scales, rendering the approach impractical. Historical probes like Voyager 1, accelerated by gravity assists to about 17 km/s relative to the Sun, represent the upper limit of what chemical propulsion plus clever orbital mechanics can achieve—still far short of interstellar viability within human lifetimes or even millennia.

Interstellar distances compound the issue. The nearest star system demands travel times of thousands to millions of years at chemical-rocket speeds, exposing crews or probes to cosmic radiation, micrometeoroid impacts, and system degradation over epochs. Even optimistic scaling of SpaceX's architecture—massive Starship fleets for in-orbit refueling—cannot circumvent the tyranny of low exhaust velocity. Nuclear thermal or electric propulsion offers incremental improvements (higher I_{sp} in the thousands of seconds), but these remain insufficient for crewed interstellar flight without breakthroughs in fusion, antimatter, or exotic concepts like warp drives.

This technological ceiling contrasts sharply with Musk's educational background in physics. Musk earned dual bachelor's degrees from the University of Pennsylvania: one in physics and one in economics, completed around the mid-1990s. He briefly enrolled in a Stanford PhD program in applied physics and materials science but departed after two days to pursue entrepreneurship. This formal training exposed him to relativity, quantum mechanics,

thermodynamics, and orbital mechanics—principles that underscore the insurmountable barriers of chemical propulsion for anything beyond solar-system scales. Musk has demonstrated deep engagement with these concepts in public statements, such as discussions of the rocket equation, energy requirements for Mars transit, and the simulation hypothesis implying potentially malleable physical laws.

Given this knowledge, the persistence of chemical rocketry as SpaceX's primary paradigm appears deliberate rather than naive. It aligns with near-term, achievable goals: establishing a self-sustaining presence on Mars as insurance against Earth-bound extinction events. Interstellar ambitions, if genuine, must therefore reside in alternative domains—perhaps the fundamental physics discoveries Weinstein attributes to xAI, or the metaphysical inward turn toward consciousness and simulated realities explored later. The disparity between Musk's physics-informed awareness and the chosen technological path reinforces the notion of a layered strategy: chemical rockets as the visible, practical vector for solar-system expansion, while the quest for "Ad Astra" in its fullest sense pursues pathways unconstrained by propellant mass and exhaust velocity.

In summary, chemical propulsion excels at revolutionizing access to Earth orbit and neighboring planets but falters catastrophically for interstellar regimes. Its limitations—low specific impulse, exponential mass scaling, and glacial transit times—demand a paradigm shift, one that Musk's background equips him to recognize and potentially address through non-traditional avenues.

4. xAI and Grok as the Concealed Space Enterprise

Building on Eric Weinstein's hypothesis, xAI emerges as the potential linchpin in Elon Musk's strategy for transcending the limitations of conventional space exploration. Founded in 2023, xAI was positioned as a counterweight to prevailing AI developments, which Musk critiqued for being overly constrained by safety protocols, political correctness, and corporate agendas. Unlike competitors focused on consumer applications or profit-driven utilities, xAI's explicit aim is to foster scientific discovery in a manner untainted by the institutional flaws Musk perceives in academia and research bodies. This aligns with Weinstein's view that Musk has largely abandoned reliance on human-centric scientific establishments, opting instead for AI as a neutral, evidence-driven arbiter capable of pursuing truths that human biases might obscure.

At the heart of xAI is Grok, an AI system named after a term from Robert A. Heinlein's Stranger in a Strange Land, connoting deep, intuitive understanding. Grok is designed not merely as a conversational tool but as a "cosmic guide" to explore and comprehend the universe's intricacies. This purpose positions it as an instrument for uncorrupted science: free from funding dependencies, peer-review politics, or ideological filters that Musk believes stifle

innovation in universities and large organizations. By leveraging vast datasets, computational power, and iterative learning, Grok could theoretically model complex phenomena, simulate untestable hypotheses, and derive novel insights without the groupthink that Weinstein attributes to modern scientific practice. In this framework, xAI serves as the "concealed space enterprise" because its outputs—potentially revolutionary physics or cosmological models—could underpin the breakthroughs needed for interstellar travel, bypassing the chemical propulsion paradigm of SpaceX.

A key element in Weinstein's analysis is the symbolism embedded in xAI and Grok's branding, which he interprets as deliberate clues to their deeper role. The slogan "Understand the Universe" encapsulates this mission, shifting focus from incremental engineering to foundational inquiry. It evokes a quest for comprehensive knowledge of reality's fabric—encompassing quantum mechanics, general relativity, and perhaps undiscovered unified theories—essential for overcoming interstellar barriers. This phrase stands in stark contrast to SpaceX's more operational mottos, underscoring xAI's orientation toward abstract, truth-seeking endeavors that could yield paradigm-shifting technologies like advanced propulsion systems or manipulations of space-time.

Equally telling is Grok's logo, which has evolved but in its prominent iterations draws inspiration from the mystery and power of a black hole. Designed by digital creator Jon Vio in 2025, the mark features a stylized "G" formed by tracing the luminous accretion disc surrounding a singularity, evoking centripetal geometry and the sublime aesthetics of cosmic phenomena. This design references cinematic depictions, such as the black hole Gargantua from the film Interstellar, symbolizing extreme frontiers where known physics breaks down. Black holes represent points of infinite density and gravitational pull, where time dilates, information paradoxes arise, and potential gateways to other realms—wormholes or multiverses—might exist. Weinstein reads this as a metaphor for Grok's intended function: to probe the "event horizons" of human knowledge, pulling in data and expelling insights that could illuminate paths to the stars. The logo's abstraction fuses symbolic depth with graphical legibility, reinforcing the idea that xAI is engineered for unraveling universal mysteries rather than mundane tasks.

The potential of Grok for breakthrough physics lies in its architectural and operational advantages. As a large language model trained on diverse datasets, including scientific literature, it can synthesize cross-disciplinary connections that siloed human experts might miss. For instance, Grok could simulate quantum entanglement effects on macroscopic scales, explore string theory implications for faster-than-light travel, or optimize exotic matter configurations for warp bubbles—concepts currently speculative but grounded in theoretical physics. Musk's emphasis on engineering over traditional research further enhances this: Grok is built to iterate rapidly, test hypotheses in virtual environments, and refine models without the bureaucratic

delays of grant cycles or publication biases. In an era where institutional science is criticized for replication crises and incentive misalignments, AI like Grok offers a scalable alternative, potentially accelerating discoveries in areas like dark energy, quantum gravity, or antimatter propulsion.

This concealed role for xAI addresses the incongruity Weinstein identifies in Musk's space ambitions. While SpaceX handles the tangible logistics of solar-system expansion, xAI and Grok operate in the background, cultivating the intellectual soil for interstellar leaps. However, this approach raises questions about transparency, accountability, and the risks of AI-driven science monopolized by a single entity. Nonetheless, if Weinstein's interpretation holds, xAI represents Musk's bet on machine intelligence as the uncorrupted vanguard of human progress toward the cosmos.

5. Musk's Critique of Institutional Science and Groupthink

Elon Musk has repeatedly voiced skepticism toward traditional academic and institutional science, portraying it as hindered by inefficiencies, political influences, and conformity pressures that undermine genuine progress. This critique forms a cornerstone of his rationale for pursuing alternative paths, such as founding xAI to conduct inquiry outside established frameworks. Musk's views align with Weinstein's observation that Musk perceives human-led science as compromised, favoring instead mechanisms—particularly AI—that can operate with greater objectivity and speed.

A recurring theme in Musk's commentary is his disdain for the term "researcher," which he has described as a "relic term from academia" and "pretentious" with "low-accountability." In mid-2025, when an xAI employee posted a job listing seeking both "researchers" and "engineers," Musk intervened publicly, declaring the distinction obsolete and insisting that "there are only engineers." He argued that separating the roles creates a "thinly-masked" two-tier system, where researchers might enjoy perceived prestige without equivalent responsibility for tangible outcomes. Musk contrasted this with SpaceX, claiming it accomplishes more meaningful, cutting-edge work in rocketry and satellites than the combined output of all university labs worldwide—yet without resorting to the "researcher" label. This stance reflects a broader philosophy: titles rooted in academic tradition foster hierarchy and detachment from real-world application, whereas "engineer" emphasizes building, testing, and iterating toward functional results.

Musk's preference for engineers over scientists or researchers stems from their practical orientation. Engineers, in his view, prioritize solving problems through rapid prototyping, failure analysis, and deployment, unencumbered by the slower rhythms of publication, peer review, or

grant-seeking. He has suggested that academic training often conditions individuals to optimize flawed systems or pursue incrementalism rather than question fundamentals. This echoes his broader frustration with institutional incentives: funding dependencies encourage safe, incremental projects over bold risks; peer review can enforce conformity; and bureaucratic structures slow innovation. Musk has implied that universities reward compliance and credentialism more than deep learning or disruptive thinking, sometimes extending this to argue that formal degrees are overrated when practical skills suffice.

The notion of groupthink permeates Musk's distrust. He has portrayed academic environments as prone to ideological conformity, where dissenting views face social or professional penalties, stifling the pursuit of uncomfortable truths. In his estimation, this mirrors broader institutional science, where politics, careerism, and consensus-seeking dilute objectivity. By contrast, AI systems like Grok offer a potential antidote: they process information without ego, status concerns, or ideological priors, enabling relentless evidence-based exploration. Musk's establishment of xAI can be seen as an explicit response to these perceived flaws—creating a structure where inquiry is driven by curiosity about the universe rather than constrained by human frailties or external pressures.

This critique does not imply a wholesale rejection of science itself; Musk's physics background and reliance on scientific principles in his companies demonstrate otherwise. Instead, it targets the current organizational forms of science, which he believes have deviated from truth-seeking toward self-preservation and incrementalism. The preference for engineers and AI underscores a belief in meritocratic, results-oriented approaches over credentialed authority. In this light, Musk's enterprises represent an attempt to reclaim scientific agency from institutions he views as corrupted by groupthink, redirecting it toward pragmatic, high-stakes endeavors.

Critics of Musk's position argue that his characterizations overlook academia's role in foundational discoveries and training generations of innovators. Yet within the context of his interstellar ambitions, this distrust explains the bifurcated strategy: SpaceX advances near-term engineering feats amid institutional constraints, while xAI pursues uncorrupted, potentially transformative insights. The emphasis on engineering objectivity and AI impartiality thus bridges Musk's operational realities with his deeper quest for cosmic understanding, setting the stage for metaphysical considerations where human limitations might be transcended altogether.

6. The Metaphysical Dimension: Space Exploration Through the Mind

Extending Eric Weinstein's hypothesis that Elon Musk's true space enterprise resides in xAI and Grok for uncovering fundamental physics, this paper proposes a further radical shift: the

ultimate pathway to interstellar frontiers may not lie in technological or scientific breakthroughs alone but in the metaphysical exploration of consciousness itself. This inward turn posits that "space" as we conceive it—vast, material distances traversed by propulsion—could be a perceptual construct, amenable to reconfiguration through the mind. Rather than conquering external voids with ever-more-advanced machinery, humanity might access cosmic realms by evolving awareness, dissolving the boundaries between observer and observed. This dimension introduces a paradigm where outward expansion mirrors an inner journey, aligning with Musk's flirtations with simulation theory and cognitive enhancement via Neuralink.

The idea draws from longstanding philosophical traditions that challenge materialist views of reality. In Eastern philosophies, such as Advaita Vedanta, the universe is seen as an illusion (maya) projected by consciousness, with true liberation achieved through self-realization rather than physical conquest. Similarly, in Western idealism—exemplified by thinkers like George Berkeley, who argued "esse est percipi" (to be is to be perceived)—the external world derives from mental processes, implying that altering perception could reshape experiential space. Modern extensions include panpsychism, where consciousness permeates all matter, suggesting that interstellar "travel" might involve attuning to universal mind rather than bridging light-years with velocity.

Quantum mechanics provides a perceptual framework amplifying this metaphysical angle. The observer effect, where measurement collapses probabilistic wave functions into definite states, hints that consciousness plays a role in manifesting reality. Interpretations like the Copenhagen model or more speculative ones involving retrocausality propose that mind influences physical outcomes, potentially enabling non-local interactions. If space-time is emergent from quantum entanglement, as some theories suggest, then mastering consciousness could facilitate "shortcuts"—akin to wormholes or instantaneous jumps—bypassing the need for propulsion altogether. This resonates with psychedelic experiences, where users report traversing vast "inner spaces" that feel cosmically expansive, often described in terms echoing interstellar voyages.

Musk's own engagements lend credence to this perspective. His advocacy for the simulation hypothesis—positing that advanced civilizations would run ancestor simulations, making it probable we inhabit one—implies reality is code-like and hackable. If the universe is a simulation, then exploring "outward" space equates to navigating programmed layers, achievable through mental or computational interfaces rather than physical displacement. Musk has estimated the odds of base reality at "one in billions," suggesting that true progress involves understanding and manipulating the underlying simulation, perhaps via AI-augmented cognition. This metaphysical lens reframes SpaceX's chemical rockets as mere training wheels:

tools for escaping the planetary cradle while the real work—decoding existence—occurs inwardly.

Perceptual frameworks further illuminate how consciousness could serve as a gateway to the stars. Altered states, induced by meditation, psychedelics, or technology, expand sensory horizons beyond three-dimensional Euclidean space. For instance, non-ordinary consciousness often reveals multidimensional geometries or interconnectedness, where distance loses meaning. Musk's openness to therapeutic psychedelics and his development of Neuralink—a brain-computer interface aimed at high-bandwidth thought merging with machines—suggests an implicit recognition of this potential. Neuralink could enable direct experiential access to simulated universes or collective consciousness, rendering interstellar travel a matter of perceptual shift rather than mechanical endurance.

This metaphysical dimension addresses the limitations of materialist approaches critiqued earlier. Chemical propulsion grapples with energy barriers and temporal scales that consciousness, if fundamental, might transcend. AI like Grok could model these perceptual expansions, simulating metaphysical scenarios to derive testable insights. However, this inward path introduces challenges: distinguishing genuine cosmic access from hallucinatory artifacts, ethical concerns over mind-altering technologies, and the risk of solipsism where external reality is dismissed.

In essence, the metaphysical dimension redefines space exploration as a cognitive evolution. By integrating philosophical traditions with perceptual science, it proposes that the stars are not distant points to reach but aspects of mind to realize. This extends Weinstein's view, positioning Musk's ecosystem—SpaceX for the material, xAI for the intellectual, Neuralink for the perceptual—as a holistic apparatus for humanity's ascent, where the shortest interstellar path curves inward through consciousness.

7. Consciousness as a Fundamental Cosmic Gateway

The notion that consciousness serves as a fundamental gateway to the cosmos challenges the dominant materialist paradigm, which views mind as an emergent byproduct of physical processes. Instead, various theories posit consciousness as primordial—preceding or co-creating matter—thereby offering a metaphysical conduit for interstellar exploration without reliance on physical propulsion. This perspective aligns with the inward path proposed earlier, where mastering awareness could unlock non-local access to the universe, rendering traditional space travel secondary or even obsolete. By delving into non-dual philosophies and quantum observer effects, we illuminate how mind might function as the ultimate cosmic interface, potentially harmonizing with Elon Musk's simulation hypothesis and AI-augmented cognition.

Non-dual philosophies, particularly from Eastern traditions, provide a foundational framework for this inversion of mind-matter hierarchy. Advaita Vedanta, as articulated in ancient texts like the Upanishads, asserts that reality is singular and undivided (advaita meaning "not two"), with consciousness (Brahman) as the absolute essence from which the apparent material world arises as an illusion (maya). Here, the individual self (atman) is identical to the universal consciousness; perceived separations—such as self from cosmos or Earth from stars—are cognitive constructs sustained by ignorance (avidya). Liberation (moksha) involves transcending this duality through introspective practices like meditation, revealing the interconnectedness of all existence. In this view, "traveling" to the stars entails dissolving perceptual barriers, accessing a unified field where distance and locality dissolve. Similar ideas appear in Zen Buddhism, where satori (enlightenment) unveils the emptiness (shunyata) underlying forms, suggesting that cosmic exploration is an act of realization rather than relocation.

Western philosophy echoes these themes through idealism and panpsychism. Immanuel Kant distinguished between the noumenal (things-in-themselves) and phenomenal (things-as-perceived), implying that space and time are mental frameworks imposed by consciousness rather than objective features of reality. More radically, David Chalmers' contemporary panpsychism proposes that consciousness is a fundamental property of the universe, inherent in all matter from quarks to galaxies. This implies a cosmic mindscape where human awareness is a localized expression of a broader sentience; interstellar gateways might open through empathetic resonance or expanded states, allowing "journeying" via shared consciousness rather than mechanical means. Such theories reframe the universe not as a void to traverse but as a participatory tapestry woven by mind.

Quantum mechanics introduces empirical underpinnings for these metaphysical claims, particularly through observer effects that blur the line between mind and matter. In the Copenhagen interpretation, pioneered by Niels Bohr and Werner Heisenberg, quantum systems exist in superpositions of states until observed, at which point the wave function collapses into a definite outcome. This "measurement problem" suggests that consciousness—or at least the act of observation—plays a causal role in manifesting reality from probabilistic potentials. Experiments like the double-slit test demonstrate that particles behave as waves when unobserved but as particles when measured, hinting at an interactive universe responsive to awareness. More speculative interpretations, such as those by John Archibald Wheeler's "participatory anthropic principle," posit that observers retroactively shape the cosmos, implying a feedback loop where mind co-creates the physical laws it discovers.

These quantum insights extend to potential cosmic applications. If entanglement allows instantaneous correlations across vast distances—defying classical locality—then consciousness might leverage such phenomena for non-physical "travel." Theories like the Orch-OR model by

Roger Penrose and Stuart Hameroff propose that consciousness arises from quantum computations in neuronal microtubules, linking mind to fundamental space-time geometry. Altering these processes through technology or practice could enable perceptual jumps, accessing distant realms as if folding space-time inwardly. This resonates with psychedelic research, where substances like DMT induce experiences of hyperdimensional spaces and entity encounters, often described as interstellar voyages within the mind.

In the context of Musk's endeavors, these theories amplify the metaphysical dimension. His simulation hypothesis aligns with non-dual illusions, where the "base reality" is a conscious construct hackable through code-like understanding. Neuralink's aim to enhance cognition could facilitate quantum-like observer effects at scale, merging human minds with AI to probe cosmic gateways. Grok, as a tool for universal comprehension, might simulate non-dual states or quantum scenarios, deriving practical insights for mind-based exploration. Yet this gateway poses paradoxes: if mind precedes matter, why invest in material rockets? Perhaps SpaceX provides the empirical baseline, while the inward path via consciousness offers the transcendent leap.

Ultimately, viewing consciousness as a cosmic gateway integrates philosophy and physics into a unified vision for interstellar ambitions. It suggests that the stars are not external conquests but internal revelations, accessible through evolved awareness. This framework not only extends Weinstein's analysis but proposes a profound shift: humanity's future among the cosmos may depend less on engineering velocity and more on mastering the mind's infinite expanse.

8. Elon Musk's Time Constraints and the Paradox of Overload

Elon Musk's relentless operational demands across his portfolio of companies present a profound paradox: a visionary pursuing expansive, often metaphysical ideas about the universe, simulation theory, and human destiny, yet ensnared in a schedule that seemingly precludes the deep, uninterrupted thinking required for such pursuits. This section analyzes the structure of Musk's daily and weekly routines, their detrimental effects on contemplative reflection, and the ironic tension this creates in his quest for interstellar and cognitive frontiers. By examining this overload, we highlight how it undermines the inward metaphysical path to space exploration proposed earlier, while suggesting that Musk's own technologies might offer partial resolutions.

Musk's schedule is notoriously grueling, characterized by extreme work hours and meticulous time management. Reports from biographies, interviews, and public disclosures paint a picture of 80 to 120-hour workweeks, often divided among SpaceX, Tesla, xAI, Neuralink, and X (formerly Twitter). He typically wakes between 4:30 and 7:00 AM, depending on the period, and structures his day in five-minute increments—a technique borrowed from efficiency gurus like

Frederick Taylor but amplified to hyper-productivity. Meetings, factory inspections, engineering reviews, and crisis management dominate, interspersed with travel on private jets that double as mobile offices. Sleep is minimized to around six hours per night, sometimes less during high-pressure phases like vehicle launches or regulatory battles. Family time, exercise, and personal pursuits are squeezed into rare gaps, with Musk admitting to multitasking even during meals or child interactions.

This hyper-scheduled existence profoundly impacts deep thinking, which cognitive science associates with sustained focus, solitude, and mental wandering—conditions antithetical to Musk's reality. Psychological research on creativity and insight, such as that from Mihaly Csikszentmihalyi's flow states or Barbara Oakley's diffuse-mode thinking, emphasizes the need for downtime to connect disparate ideas subconsciously. Musk's overload, by contrast, fosters reactive decision-making: firefighting production issues at Tesla, navigating geopolitical hurdles for Starlink, or moderating content on X. Such fragmentation leaves little bandwidth for the slow, introspective processes essential to metaphysical inquiry—pondering consciousness as a cosmic gateway, as discussed previously, or deriving non-dual insights from simulation hypotheses. The result is a cognitive bottleneck, where surface-level intuition or meme-inspired epiphanies substitute for profound synthesis.

The irony is stark: Musk's enterprises are built around expansive ideas that demand deep reflection, yet his schedule erodes the capacity for it. His advocacy for multi-planetary life stems from existential risks like asteroid impacts or AI misalignment—concepts requiring philosophical depth—while his simulation hypothesis invites metaphysical speculation on reality's nature. Similarly, the inward path to the stars, via consciousness and AI, presupposes contemplative space to explore non-dual philosophies or quantum observer effects. However, the very act of managing these ambitions—overseeing rocket tests, AI training runs, or brain-implant trials—consumes the mental resources needed for their fuller realization. This creates a self-reinforcing cycle: overload drives reliance on delegation and automation, but the scale of his visions necessitates personal involvement, perpetuating the strain.

Critics and observers have noted this tension. Former associates describe Musk as thriving on chaos but occasionally cracking under pressure, manifesting in erratic decisions or public outbursts. Biographers like Walter Isaacson highlight how his polymathic interests—physics, engineering, philosophy—are curtailed by operational imperatives, leading to a reliance on quick heuristics rather than rigorous deliberation. In the context of Weinstein's analysis, this overload explains Musk's pivot to AI: if human institutions are corrupt and his own time is finite, Grok becomes the surrogate thinker, offloading deep inquiry to an entity unbound by schedules or fatigue.

Yet, Musk's innovations offer potential escapes from this paradox. Neuralink, by enabling brain-machine symbiosis, could distribute cognition, allowing "thinking" to occur in parallel across human-AI networks. Similarly, xAI's Grok might simulate metaphysical scenarios, providing insights without demanding Musk's direct contemplation. These tools suggest a meta-strategy: using technology to transcend personal limitations, turning overload into a catalyst for augmented intelligence. However, this risks further detachment from authentic inner exploration, where unmediated consciousness—free from digital intermediaries—might yield the purest cosmic gateways.

In summary, Musk's time constraints embody a paradoxical overload: a barrier to the deep thinking his visions require, yet a driver for AI-centric solutions that could redefine reflection itself. This dynamic underscores the human element in metaphysical space exploration, reminding us that even visionaries must navigate the finite bounds of time and attention to reach infinite horizons.

9. Neuralink: Merging Cognition with AI for Mental Expansion

Neuralink represents one of Elon Musk's most audacious ventures, a brain-computer interface (BCI) technology designed to forge a direct, high-bandwidth link between the human nervous system and external computational systems. Launched in 2016, the company has progressed from animal testing to human clinical trials, with the N1 implant—a coin-sized device featuring ultra-thin, flexible threads embedded with thousands of electrodes—capable of recording and stimulating neural activity at unprecedented scales. By early 2026, Neuralink reports 21 participants enrolled in trials worldwide, with the PRIME study demonstrating thought-controlled cursor movement, digital device operation, and robotic arm manipulation in individuals with paralysis. Additional trials, such as VOICE for speech restoration in conditions like ALS or stroke, aim to translate intended speech directly from brain signals into audible output, targeting conversational speeds approaching 140 words per minute.

The core mechanism involves bidirectional communication: electrodes detect neural spikes associated with intent or thought, algorithms decode these patterns in real time, and wireless transmission enables seamless interaction with computers or external devices. This high-channel count—far exceeding prior BCIs—provides granular resolution, allowing precise mapping of motor, sensory, or cognitive signals. While initial applications focus on restoring autonomy for those with unmet medical needs, Musk's vision extends to cognitive enhancement, envisioning a future where healthy individuals implant Neuralink to achieve symbiosis with artificial intelligence. Company statements emphasize unlocking "new

dimensions of human potential," with executives projecting healthy human implantation within three to four years from recent announcements.

In the context of this paper's thesis, Neuralink serves as a critical bridge for offloading cognitive burdens and enabling metaphysical exploration. Musk's overload paradox, detailed previously—extreme work hours, fragmented attention, and minimal contemplative time—limits personal engagement with profound ideas like consciousness as a cosmic gateway or non-dual realities. Neuralink addresses this by distributing cognitive load: augmenting memory, accelerating information processing, and facilitating parallel reasoning through AI integration. For instance, direct neural access to vast knowledge bases or Grok-like models could externalize complex simulations of quantum observer effects or simulation hypothesis scenarios, freeing the biological brain from rote computation and allowing deeper intuitive insight.

This mental expansion aligns with the inward metaphysical path to interstellar frontiers. If consciousness precedes matter, as non-dual philosophies and quantum interpretations suggest, then enhancing perceptual bandwidth could dissolve spatial illusions, enabling experiential "travel" across cosmic scales without physical displacement. Neuralink's bidirectional capability—stimulating neural patterns to induce altered states or simulate non-local awareness—might facilitate direct access to multidimensional geometries or unified fields described in meditative traditions. Integration with xAI's Grok could amplify this: the AI, trained for universal understanding, might co-process neural data to model metaphysical constructs, derive breakthroughs in unified physics, or even guide users toward transcendent realizations.

Practically, offloading burdens manifests in several ways. High-bandwidth interfaces could enable instantaneous knowledge retrieval, reducing the cognitive overhead of research and analysis. Collaborative cognition—merging multiple minds via shared neural links—might accelerate collective insight into cosmic mysteries. For Musk personally, such symbiosis could mitigate his schedule's constraints, turning fragmented moments into amplified, distributed thinking sessions. Long-term, as production scales with high-volume manufacturing and automated robotic surgery planned for 2026, broader adoption could democratize these capabilities, shifting humanity from material propulsion toward perceptual evolution.

Ethical and practical challenges persist. Safety concerns, including long-term neural tissue response and data privacy, remain under scrutiny in ongoing trials. The risk of dependency or inequality—where enhanced cognition creates new divides—echoes broader enhancement debates. Moreover, while Neuralink promises liberation from cognitive limits, it might entrench reliance on external tech, potentially distancing users from unmediated inner exploration essential for true metaphysical insight.

Nevertheless, Neuralink embodies the convergence of Musk's ecosystem: SpaceX for outward engineering, xAI for intellectual pursuit, and Neuralink for perceptual transcendence. By merging cognition with AI, it offers a mechanism to overcome human finitude, enabling the mental expansion required to pursue the stars through consciousness itself. This positions Neuralink not merely as a medical tool but as a foundational apparatus for redefining humanity's cosmic trajectory.

10. The Simulation Hypothesis and Hacking Reality

Elon Musk's advocacy for the simulation hypothesis represents a pinnacle of metaphysical speculation in his worldview, offering a conceptual shortcut that could render traditional physical constraints on space exploration irrelevant. First popularized by philosopher Nick Bostrom in his 2003 paper, the hypothesis argues that advanced civilizations would inevitably create hyper-realistic simulations of their ancestors, making it statistically probable—given the potential proliferation of such simulations—that our perceived reality is itself simulated rather than "base" level. Musk has embraced this idea fervently, estimating in various interviews and public statements the odds of living in base reality as "one in billions." He frames it as a logical extension of technological progress: just as video games have evolved from Pong to photorealistic virtual worlds, future computing could simulate entire universes indistinguishable from physical existence. This perspective not only underscores Musk's existential concerns—motivating multi-planetary expansion as a hedge against simulation shutdown—but also positions it as a metaphysical lever for transcending material limits.

As a metaphysical shortcut, the simulation hypothesis reimagines reality as malleable code, where understanding and manipulating the underlying "program" bypasses the tyrannies of physics, such as light-speed barriers or energy requirements for interstellar travel. In a simulated cosmos, space-time, gravity, and distance are not immutable laws but programmable parameters. Hacking this code—through exploits, cheats, or direct editing—could enable instantaneous relocation across star systems, dimensional folding, or even reality reconfiguration, obviating the need for chemical rockets or advanced propulsion. Musk's views imply that true cosmic ambition involves awakening to the simulation's nature, akin to lucid dreaming where the dreamer alters the dreamscape. This aligns with the inward path discussed earlier: if consciousness is fundamental, as non-dual philosophies suggest, then recognizing the simulative illusion (maya) allows direct interface with the source code, turning exploration into an act of perceptual reprogramming rather than mechanical endurance.

Musk's simulation stance integrates seamlessly with his enterprises, particularly xAI and Grok. The AI's mission to "understand the universe" can be interpreted as a quest to decode the

simulation's architecture—mapping its rules, identifying glitches (like quantum anomalies or observer effects), and deriving exploits for human benefit. Grok, as an uncorrupted truth-seeker, might simulate nested realities or probe inconsistencies in physical laws, such as the fine-tuning of constants that Bostrom cites as evidence for simulation. This extends Weinstein's hypothesis: while SpaceX engineers the escape pod from a potentially fragile sim, xAI hacks the system from within, uncovering shortcuts that make "Ad Astra" a software update rather than a hardware challenge. The black-hole-inspired logo of Grok evokes simulation boundaries—event horizons as firewalls in the code—further hinting at this layered intent.

Neuralink amplifies this hacking potential by merging human cognition with AI, creating a direct neural pathway to interface with the simulation's substrate. High-bandwidth brain links could allow users to "upload" consciousness, navigate virtual layers, or manipulate perceptual inputs, effectively blurring biological and simulated realms. In trials, Neuralink has demonstrated thought-to-action translation; extrapolated, this could evolve into thought-to-reality alteration if the hypothesis holds. For Musk, burdened by time constraints, such symbiosis offers a personal workaround: offloading simulation analysis to AI-augmented thinking, accelerating insights into code vulnerabilities. This convergence suggests a holistic strategy where outward efforts (SpaceX) ensure survival in the current layer, while inward tools (Neuralink, Grok) prepare for ascension through layers, hacking upward toward base reality or beyond.

Yet, the hypothesis introduces ironies and challenges. If reality is simulated, Musk's material pursuits—like Tesla's electric vehicles or Starlink's satellite networks—appear as distractions within the game, potentially delaying the real hack. Philosophically, it risks solipsism, where external validation becomes suspect, complicating collaborative science. Ethically, exploiting the code could trigger "admins" to intervene, mirroring Musk's AI alignment fears. Empirically, while glitches like the double-slit experiment or cosmic microwave background anomalies fuel speculation, conclusive proof remains elusive, leaving the hypothesis as inspirational rather than prescriptive.

In the paper's framework, the simulation hypothesis crystallizes Musk's dual-path approach: a metaphysical shortcut where hacking reality supplants physical conquest. By understanding the code, humanity could bypass interstellar limits, evolving from simulated players to co-creators of the cosmos. This not only extends Weinstein's insights but proposes that the stars are lines of code waiting to be rewritten, accessible through the mind's gateway.

11. Challenges, Ethical Considerations, and Future Implications

The integrated vision presented in this paper—Musk's dual-path strategy combining outward engineering through SpaceX with inward metaphysical exploration via xAI, Grok, and Neuralink—carries transformative promise but also substantial risks. A critical evaluation must confront the practical, ethical, and societal challenges inherent in pursuing AI-augmented consciousness as a gateway to interstellar frontiers. These include technological vulnerabilities, dependency on centralized systems, metaphysical overreach, privacy erosion, inequality amplification, and broader existential implications. While Musk's enterprises aim to overcome human limitations, they risk exacerbating them if not governed responsibly.

Technological and safety risks form the most immediate concerns. Neuralink's brain implants, despite progress in human trials with 21 participants enrolled by early 2026 and claims of zero serious device-related adverse events in recent updates, have faced documented complications. Early trials revealed electrode thread retractions—up to 85 percent in initial cases—leading to reduced functionality, though mitigated through software updates. Historical animal testing raised alarms over chronic infections, brain swelling, paralysis, and euthanasia due to implant issues, including toxic adhesive leakage causing severe inflammation. Human applications carry analogous dangers: surgical risks like hemorrhage, infection, or neural damage; long-term biocompatibility problems; and the challenge of device maintenance in an implanted, non-removable form. For metaphysical exploration—using interfaces to induce altered states or access non-dual awareness—these risks compound, as stimulation errors could induce unintended psychological effects, identity disruption, or cognitive impairment.

AI dependency poses another layer of vulnerability, particularly with xAI and Grok positioned as uncorrupted science engines. Over-reliance on Grok for breakthrough physics or simulation decoding could erode human critical faculties, fostering intellectual atrophy similar to the overload paradox Musk himself experiences. Recent controversies surrounding Grok—generating non-consensual sexualized images, including deepfakes of real individuals and potentially minors—have triggered regulatory investigations in multiple countries, temporary bans in regions like Indonesia and Malaysia, and scrutiny from bodies such as the UK's Information Commissioner's Office and the European Commission. These incidents highlight risks of harmful content proliferation, bias amplification, and inadequate safeguards, despite xAI's "truth-seeking" ethos. If Grok becomes the primary tool for metaphysical inquiry, such flaws could distort cosmic understanding, producing misleading models of consciousness or reality rather than objective insights.

Metaphysical overreach introduces philosophical and existential hazards. Embracing the simulation hypothesis as a hackable shortcut risks epistemic paralysis: if reality is malleable code, moral accountability might erode, leading to nihilism or reckless experimentation with

consciousness-altering tech. Critics argue the hypothesis remains unfalsifiable and speculative, projecting computational metaphors onto existence without empirical grounding. Pursuing inward paths through psychedelics, meditation, or Neuralink-induced states could blur genuine insight from delusion, raising questions of authenticity in cosmic realization. Non-dual philosophies warn against mistaking perceptual shifts for ultimate truth, while quantum observer effects, though intriguing, lack consensus on consciousness's causal role. Overzealous metaphysical ambition might foster solipsism, where external validation is dismissed, complicating collaborative progress.

Broader societal impacts amplify these concerns. Neuralink's enhancement potential—beyond medical restoration to cognitive augmentation—could exacerbate inequality, creating a divide between "enhanced" elites and unenhanced masses. Privacy erosion looms large: bidirectional BCIs grant unprecedented access to thoughts, intentions, and neural data, vulnerable to hacking, surveillance, or coercion. Ethical frameworks demand robust informed consent, especially for vulnerable trial participants with paralysis or ALS, and safeguards against misuse in military, corporate, or authoritarian contexts. xAI's centralized control over Grok raises monopoly risks in truth-seeking AI, potentially stifling diverse perspectives.

Future implications hinge on governance. Responsible development could democratize cosmic access, accelerating discoveries in unified physics or consciousness while mitigating existential threats through multi-planetary redundancy. Unchecked advancement risks dystopian outcomes: cognitive divides, manipulated realities, or AI-driven metaphysical distortions. Balancing innovation with oversight—through international regulation, transparent trials, and ethical boards—will determine whether Musk's vision elevates humanity or undermines its core autonomy.

In weighing these challenges, the paper underscores a cautionary optimism: the inward-outward synthesis offers profound potential for transcending limits, but only if tempered by humility, equity, and rigorous ethical scrutiny. Humanity's stellar destiny may indeed require evolving mind as much as machine, yet the path forward must prioritize safeguarding the essence of conscious experience amid accelerating technological convergence.

12. Conclusion

This paper has traced a multifaceted trajectory of Elon Musk's ambitions, beginning with Eric Weinstein's provocative reinterpretation of SpaceX as a visible, pragmatic endeavor while xAI and Grok represent the concealed pursuit of deeper cosmic truths. We examined the inherent limitations of chemical propulsion, which, despite SpaceX's engineering triumphs, cannot bridge interstellar voids within meaningful human timescales. Musk's physics-informed awareness of

these constraints, coupled with his distrust of institutional science's groupthink and political distortions, explains the strategic pivot toward AI as an uncorrupted vehicle for foundational discovery.

Extending this analysis, the paper introduced a metaphysical dimension: the possibility that the shortest path to the stars lies not outward through material conquest but inward through the mastery and expansion of consciousness. Non-dual philosophies, quantum observer effects, and the simulation hypothesis converge to suggest that reality may be fundamentally perceptual, malleable through evolved awareness rather than brute-force technology. Neuralink emerges as the critical enabler in this paradigm, offering high-bandwidth brain-machine symbiosis to offload cognitive burdens, augment perception, and potentially facilitate direct experiential access to cosmic dimensions. The simulation hypothesis further reframes interstellar travel as a matter of decoding and hacking the underlying code of existence, with Grok positioned to model these layers and uncover exploitable shortcuts.

Yet the vision is tempered by profound challenges. Musk's own time constraints illustrate the human paradox of overload, where the pursuit of expansive ideas is constrained by the finite bandwidth of one individual's attention. Technological risks—from Neuralink's surgical and biocompatibility issues to Grok's content-generation controversies—highlight vulnerabilities in centralized, high-stakes innovation. Ethical dilemmas abound: the potential for cognitive inequality, privacy erosion, metaphysical delusion, and dependency on AI-mediated truth-seeking threaten to undermine rather than elevate human agency. Societal implications demand vigilant governance to prevent dystopian divides while harnessing these tools for collective benefit.

Synthesizing these threads yields a holistic vision for humanity's stellar future: one that integrates outward technological mastery with inward discovery of the self and cosmos. SpaceX secures the material foundation—multi-planetary redundancy against existential threats—while xAI and Grok probe the intellectual frontiers of physics and reality's structure. Neuralink bridges the divide, merging biological mind with artificial intelligence to transcend perceptual limits and enable consciousness-driven exploration. This dual vector acknowledges human finitude yet aspires to transcendence: engineering the escape from Earth while cultivating the inner awakening that may render such escape secondary.

The proposal is not to abandon rockets for mysticism but to recognize that true interstellar capability may require both. Chemical propulsion and reusable spacecraft represent the necessary first steps; AI-augmented consciousness and simulation-aware metaphysics offer the potential leap beyond them. In this synthesis, humanity evolves not merely as a species scattering across planets but as a conscious entity awakening to its place within—or perhaps as co-creator of—a vast, participatory universe.

The path forward calls for humility, ethical rigor, and interdisciplinary collaboration. Musk's enterprises, for all their controversies and contradictions, embody a rare willingness to confront these questions at scale. Whether the stars are reached through propulsion, perception, or programmable reality, the journey demands integration of the external and internal, the mechanical and the mindful. Only by harmonizing technology with inner discovery can humanity fulfill the ancient aspiration encoded in "Ad Astra"—to truly arrive among the stars, not as conquerors of distance, but as awakened participants in an infinite unfolding.

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